CLAIMS

What is claimed is:

1. A bodily fluid extraction device comprising:

a penetration member configured for penetrating a target site and subsequently residing within the target site and extracting a bodily fluid sample therefrom, the penetration member including:

a proximal end adapted for fluid communication with an analyte analysis system;

a distal end; and

a channel extending from the distal end to the proximal end, wherein the distal end includes:

a sharp portion for penetrating the target site; and

a flexible feature adapted for promoting bodily fluid flow into the channel by protruding into the target site after the penetration member has penetrated the target site.

2. The bodily fluid extraction device of claim 1 further including a conduit attached to the proximal end of the penetration member and configured for transporting an extracted bodily fluid sample from the penetration member to an analyte analysis module.

3. The bodily fluid extraction device of claim 2, wherein the conduit is made of a flexible material.

4. The bodily fluid extraction device of claim 1, wherein the flexible feature includes:

a first end;

a free second end; and

an arch between the first end and the second end.

5. The bodily fluid extraction device of claim 4, wherein the flexible feature is configured as a leaf spring.

6. The bodily fluid extraction device of claim 1, wherein the flexible feature is an expandable flexible feature.

7. The bodily fluid extraction device of claim 6, wherein the flexible feature includes pores.

8. The bodily fluid extraction device of claim 1, wherein the flexible feature is adapted for promoting interstitial fluid flow into the channel.

9. The bodily fluid extraction device of claim 1 further including at least one pressure ring.

10. The bodily fluid extraction device of claim 9, wherein the at least one pressure ring is a plurality of oscilatible pressure rings.

11. A method for extracting bodily fluid, the method comprising:

providing a bodily fluid extraction device that includes:

a penetration member configured for penetrating a target site and subsequently residing within the target site and extracting a bodily fluid sample therefrom, the penetration member including:

a channel;

a proximal end adapted for fluid communication with an analyte analysis system; and

a distal end; and

a channel extending from the distal end to the proximal end,

wherein the distal end includes:

a sharp portion for penetrating a target site; and

a flexible feature adapted for promoting bodily fluid flow into the channel by protruding into the target site after the penetration member has penetrated the target site;

penetrating a target site with the distal end of the penetration member and the flexible portion is caused to protrude into the target site and promote bodily fluid flow into the channel;

extracting bodily fluid from the target site via the channel of the bodily fluid extraction device.

12. The method of claim 11, wherein the extracting step occurs for a period in the range of from 30 minutes to 72 hours.

13. The method of claim 11, wherein the extracting step extracts interstitial fluid.

14. The method of claim 11, wherein the penetrating step includes causing a flexible portion to expand after the target site has been penetrated.

15. The method of claim 11, wherein the penetrating step includes at least one of deflecting and compressing the flexible feature such that the flexible feature protrudes into the target site.

16. A bodily fluid extraction device comprising:

a penetration member configured for penetrating a target site and subsequently residing within the target site and extracting a bodily fluid sample therefrom, the penetration member including:

a proximal end adapted for fluid communication with an analyte analysis system;

a distal end; and

a channel extending from the distal end to the proximal end, wherein the distal end includes:

a sharp portion for penetrating the target site; and

a flexible feature adapted for promoting bodily fluid flow into the channel by protruding into the target site after the penetration member has penetrated the target site; and

at least one pressure ring.

17. The bodily fluid extraction device of claim 14, wherein the at least one pressure ring is an oscillatable pressure ring.